

Recovery Plan Action Status

Plan Name: Recovery Plan for the Bog Turtle, Northern Population

Plan Status: Final

Plan Date: 15-May-01

Lead Agency: USFWS

Lead Office: Pennsylvania Ecological Services Field Office

(2814)

234-4090)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	1	Map/identify watersheds or wetland systems of occurrences	Partially Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Management: Planning	Internal Field Assistance	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	10	Identify project/permit categories that may adversely affect bog turtles and their habitat	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Army Corps of Engineers, Federal or State departments of transportation, Environmental Protection Agency , State Wildlife Agency	Management: Planning	Internal Field Assistance	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	11	Train appropriate federal, state, and local agency staff in the recognition of bog turtle habitat, and threats to habitat and species	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Other: Information and Education	Internal Field Assistance	Continue at 2K level indefinitely
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	12	Avoid and minimize direct and indirect adverse effects to bog turtles and their habitat	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Army Corps of Engineers, Federal or State departments of transportation, Environmental Protection Agency , State Wildlife Agency	Management: Land Use, Management: Planning	Internal Field Assistance, Internal Technical Assistance	No separate cost
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	13	In each RU, identify and priority sites for appropriate conservation efforts	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Pending survey results in 3.1.2

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	14	Develop voluntary, cooperative stewardship programs to conserve the bog turtle and it's habitat on private property	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Partners for Fish and Wildlife, Nongovernmental Organizations , State Wildlife Agency	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Internal Technical Assistance	Intermittent there after as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	15	Develop a model to identify potential bog turtle habitat and locate additional bog turtle sites	Ongoing Current	FY 2005		U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	funding after year 1 is for model refinement
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	16	Develop and use a standardized bog turtle survey protocol	Ongoing Current	FY 2000 - FY 2004	FY 2006	U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Research: Other Information, Research: Population Surveys	Contract	Additional as needed; see Appendix B in this plan
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	17	Ensure that qualified searchers conduct bog turtle surveys	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Management: Identify/Protect Foraging, Breeding and Mig Habitats	Internal Technical Assistance	Additional 3K intermittently as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	18	Investigate the effectiveness, risks and benefits of bog turtles at historical sites in the Prairie Peninsula/Lake Plain RU	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	19	Conduct surveys to re-evaluate the presence of bog turtles at historical sites in the Prairie peninsula/Lake Plain RU	Ongoing Not Current			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	2	Protect bog turtle sites through purchase and conservation easements	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Nongovernmental Organizations , State Wildlife Agency, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife	Acquisition: Easement, Acquisition: Fee Title	Internal Administrative, Internal Field Assistance	TBD

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	20	Determine effective population size	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	21	Use available genetic data to assist conservation efforts	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	No separate cost; planning task
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	22	Restore bog turtle population within Prairie Peninsula/Lake Plain RU through reintroductions	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	To be initiated after year 3 as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	23	Use a standardized protocol to evaluate bog turtle sites	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Additional 7K per year as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	24	Conduct research/studies to understand and ID the degree to which land-use activities alter bog turtle habitat	Ongoing Not Current			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	TBD
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	25	Identify the safest and most effective methods for controlling invasive native and exotic plants, and setting back succession	Ongoing Current	FY 2005		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Internal Technical Assistance	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	26	Determine the safest and most effective methods for using grazing to restore and maintain bog turtle habitat	Partially Complete	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Private landowners, State Wildlife Agency	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance, Internal Technical Assistance	Intermittent - 2K approx. every 3 years
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	27	Identify methods to reconnect fragmented habitat	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Subsequently as needed, cost TBD

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	28	Restore hydrology to altered bog turtle sites	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey, U.S. Army Corps of Engineers, Private landowners, Federal or State departments of transportation, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Future \$ depends on success of initial treatments
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	29	Reconnect fragmented habitats using methods identified in Task 6.3.4	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Cost TBD
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	3	Monitor the status of and threats to extant populations	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife	Research: Habitat Status	Species Expert, Volunteer	Continue until delisted. Implementation includes tasks 1.3 & 7.1.1
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	30	Develop a survey protocol to evaluate the population status of bog turtle sites	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	31	Implement strategies developed in Task 7.1	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	TBD - includes task 7.1.5
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	32	Train law enforcement personnel	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	33	Create a repository of information that could assist LE personnel in identifying areas from which turtles have been taken	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Continue with 2K per year as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	34	Investigate the effectiveness, risks and benefits of PIT tagging wild and captive bog turtles as a research tool and deterrent to collection/trade	Ongoing Not Current	FY 2006		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, State Wildlife Agency	Research: Other Information, Research: Population Assessment	Contract, Internal Technical Assistance	Ongoing coordination
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	35	Develop and use genetic markers to identify the origin of seized turtles	Ongoing Not Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Geological Survey, State Wildlife Agency	Research: Genetics	Contract	markers developed; 1K annually through recovery period
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	36	Inform and educate individuals/entities who own or manage bog turtle habitat about the species and threats to its existence	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	37	Amend and/or clarify the scope of state and municipal regulatory protections afforded to bog turtles and their habitat	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency, Local and Municipal Governments	Work type not yet selected	Labor type not yet selected	No separate cost
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	38	Conduct surveys to re-evaluate the presence of bog turtles at historical sites in other recovery units	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Additional 2K in year four

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	39	Conduct surveys to locate additional populations of bog turtles	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Army Corps of Engineers, Federal or State departments of transportation, State Wildlife Agency, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife	Management: Land Use, Management: Planning	Contract, Internal Technical Assistance	10K total after year 3 - does not include survey's pursuant to project planning
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	4	Identify methods to prevent adverse hydrological changes to bog turtle habitat, and restore hydrology at altered sites	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	40	Determine family size	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	41	Re-evaluate recovery criteria	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	initiate after year 3, no separate costs
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	42	Develop a protocol to assess the health of bog turtles prior to reintroduction	Not Started			Academic institutions	Work type not yet selected	Labor type not yet selected	Additional 1K in year four
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	43	Develop a strategy for reintroducing bog turtles into areas from which they have been extirpated	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	44	Restore bog turtle populations within the Prairie Peninsula/Lake Plain RU through reintroductions	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	To be initiated after year 3 as needed; funding TBD

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	45	Identify and map the groundwater recharge and supply zones associated with bog turtle sites	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Geological Survey	Work type not yet selected	Labor type not yet selected	Additional 20K in year four
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	46	Ensure that agency expertise is available to assist in the management, restoration and maintenance of bog turtle habitat	Ongoing Current	FY 2006		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Internal Technical Assistance	Cost will be part of operating budgets of agencies
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	47	Determine what constitutes a "viable" bog turtle habitat	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	48	Determine the baseline health parameters of free-ranging bog turtles	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	49	Develop a protocol to assess the role of disease in wild bog turtle populations	Not Started			Academic institutions	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	5	Control succession and invasive exotic plants	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, Private landowners, U.S. Fish and Wildlife Service, Partners for Fish and Wildlife, Nongovernmental Organizations , State Wildlife Agency, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife	Management: Habitat Maintenance and Manipulation	Contract, Internal Field Assistance	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	50	Determine the effects of predation on population size, structure, and recruitment	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Nongovernmental Organizations , State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Intermittently, some costs incorporated into monitoring tasks

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	51	Identify appropriate population management techniques	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Additional 3K per year as needed
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	52	Identify protocols to be followed as to the disposition of confiscated turtles	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, Academic institutions	Work type not yet selected	Labor type not yet selected	
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	53	Investigate the potential for using neighborhood watches to monitor bog turtle sites for illegal collecting activity	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	If deemed beneficial, coordinate an ongoing program
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	54	Promote the development and implementation of laws regulating intro-and inter-state commerce in state and federally species	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	ES also includes Division of Endangered Species in Washington, D.C.
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	55	Develop and distribute education materials about the bog turtle	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Department of Agriculture, Nongovernmental Organizations , State Wildlife Agency, U.S. Fish and Wildlife Service, Division of Refuges and Wildlife	Work type not yet selected	Labor type not yet selected	As needed including 9.2.2
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	56	Make effective use of the media in conducting outreach efforts	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Other: Information and Education	Internal Field Assistance	Will involve staff time, no additional costs
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	57	Develop and implement programs targeted specifically at local decision makers	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Materials development and refinement

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Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	3	58	Develop RU specific recovery tasks recognizing that each RU will require a different prioritization of approaches	Ongoing Current			U.S. Fish and Wildlife Service, Ecological Services Division, Academic institutions, State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Priority setting complete by 2003 - no separate costs; implementation TBD
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	1	6	Determine and implement effective strategies for preventing and prosecuting offenses relating to the illegal collection, trade, and possession of bog turtles	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Other: Law Enforcement	Internal Field Assistance	No additional costs
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	7	Map contiguous wetland habitat	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Nongovernmental Organizations , State Wildlife Agency	Work type not yet selected	Labor type not yet selected	Continue as needed. Note, tasks 1.1.1-1.1.3 will be implemented as per task 1.1.4
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	8	Include all extant bog turtle sites on the state freshwater wetlands, maps, as appropriate	Ongoing Not Current			State Wildlife Agency	Work type not yet selected	Labor type not yet selected	5K additional in 2004-2005; some costs included under tasks 1.1.1 & 1.1.2
Bog (=Muhlenberg) turtle (Clemmys muhlenbergii)	2	9	Ensure that adequate screening tools for early identification of projects that may affect bog turtles are used	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, State Wildlife Agency	Management: Planning	Internal Technical Assistance	No separate cost